1270.0.55.002 - Australian Statistical Geography Standard (ASGS): Volume 2 - Indigenous Structure, July 2016

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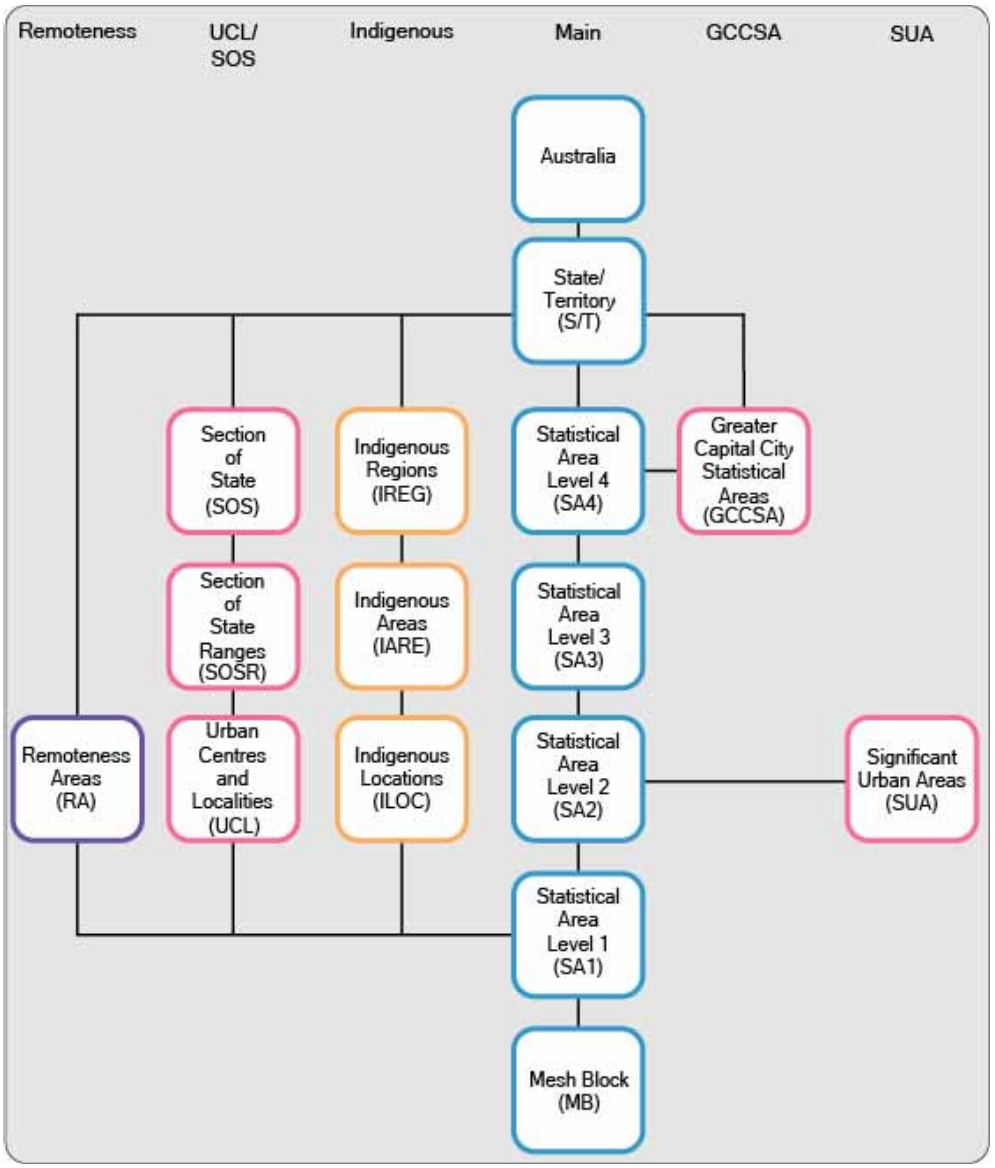
Summary

Classification structures

CLASSIFICATION STRUCTURE

The Indigenous Structure is one of the ABS structures in the Australian Statistical Geography Standard (ASGS). Diagram 1 depicts the structure, its component regions and how they relate to the ASGS.

DIAGRAM 1: ASGS ABS STRUCTURES



Summary table

SUMMARY TABLE

A summary of the units of the Indigenous Structure are provided in Table below.

Region Type	Name	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	OT(a)	Aust.
IREG(b)	Indigenous Region	9	4	10	5	10	3	9	3	5	58
IARE(b)	Indigenous Area	109	41	87	34	71	13	64	5	6	430
ILOC(b)	Indigenous Location	292	91	191	89	214	36	187	8	7	1115

(a) Other Territories (OT) includes the territories of Cocos (Keeling) Islands, Christmas Island, Jervis Bay and Norfolk Island
(b) Includes records for Migratory-Offshore-Shipping and No usual address for each State and Territory

Related material and release timetable

RELATED MATERIAL AND RELEASE TIMETABLE

This volume, Australian Statistical Geography Standard (ASGS) Volume 2: Indigenous Structure, contains a description of the regions which make up the ASGS Indigenous Structure. They comprise:

- Indigenous Regions
- Indigenous Areas
- Indigenous Locations

The following supporting material is available with this release for Indigenous Structure:

- digital boundaries for the regions described in this publication as ESRI Shape files, MapInfo Interchange Format files, MapInfo TAB files and Open Geospatial Consortium GeoPackage
- ABS Geospatial Web Services User Guide
- codes, labels and hierarchies for all the regions described in this publication in '.csv' format
- online mapping tool to view and compare the ASGS regions, ABS Maps
- 2011 to 2016 ASGS Indigenous Structure correspondences
- other correspondences available upon request.

The 2016 ASGS including supporting material, digital boundaries, codes, labels, hierarchies, maps and correspondences will be released progressively from July 2016 until early 2018. All of these products will be available from the ABS website at https://www.abs.gov.au/geography.

Indigenous Locations (ILOC)

INDIGENOUS LOCATIONS (ILOC)

Indigenous Locations are formed by combining together one or more Statistical Area Level 1 (SA1). Indigenous Locations generally represent small Aboriginal and Torres Strait Islander communities (urban and rural) with a minimum population of 90 Aboriginal and Torres Strait Islander usual residents. An Indigenous Location is an area designed to allow the production and analysis of statistics relating to Aboriginal and Torres Strait Islander Peoples with a high level of spatial accuracy, while also maintaining the confidentiality of individuals. For the 2016 Australian Statistical Geography Standard (ASGS), 1115 Indigenous Locations have been defined to cover the whole of geographic Australia.

There are non-spatial Indigenous Locations for Migratory - Offshore - Shipping and No Usual Address in each State and Territory.

INDIGENOUS LOCATION NAMES
Indigenous Location names are allocated by ABS and are generally based upon a commonly identified name or combination of names for the area/community that the boundary encompasses. In locations encompassing multiple communities a combination of up to three distinct community names have been used to label the location.

INDIGENOUS LOCATION CODING STRUCTURE
Each Indigenous Location has a unique eight digit hierarchical code. Indigenous Locations are allocated a two digit code. This is prefixed by the six digit Indigenous Area code to complete the Indigenous Location code.

Special purpose codes are included as balancing items. SA1s allocated to these codes are not part of a distinct Indigenous Location.

- Codes ending in 94 are reserved for cases where people are coded to No Usual Address SA1s.
- Codes ending in 97 are reserved for cases where people are coded to Migratory, Offshore and Shipping SA1s.

Example:

State and Territory Name	State and Territory Code	Indigenous Location Code	Indigenous Location Name
Victoria	2	20100101	Keilor
Victoria	2	20100102	Sunshine
Victoria	2	20100201	Cardinia
Victoria	2	20100301	Craigieburn - Sunbury
Victoria	2	20100401	Cranbourne
Victoria	2	20100402	Hallam - Berwick - Pearcedale
Victoria	2	29499494	No usual address (Vic.)
Victoria	2	29799797	Migratory - Offshore - Shipping (Vic.)

The codes used for the 2016 Indigenous Locations may not match those used in 2011 in some instances. In future ASGS editions, it may also be necessary to allocate new codes . Changes to codes occur where an Indigenous Location is abolished or changes significantly for new editions of the ASGS, the Indigenous Location identifier will be retired and the replacement Indigenous Location(s) given a new code. Correspondences enabling translation of data from 2011 to 2016 and how these changes have been applied will be released with this volume.

Indigenous Area (IARE)

INDIGENOUS AREA (IARE)

Indigenous Areas are medium sized geographical units designed to facilitate the release and analysis of more detailed statistics for Aboriginal and Torres Strait Islander Peoples. Indigenous Areas provide a balance between spatial resolution and population size, which provides the ability to release more detailed socioeconomic attribute data. They are created by combining together one or more Indigenous Locations. For the 2016 Australian Statistical Geography Standard (ASGS) 430 Indigenous Areas are defined to cover the whole of geographic Australia.

There are non-spatial Indigenous Areas for Migratory - Offshore - Shipping and No Usual Address in each State and Territory.

INDIGENOUS AREA NAMES
Indigenous Area Names are allocated by ABS and are generally based upon a commonly identified name or combination of names for the area/community which the boundary encompasses. In areas encompassing multiple communities a combination of up to three distinct community names have been used to label the area.

INDIGENOUS AREA CODING STRUCTURE
Indigenous Areas have a six digit hierarchical code. Indigenous Areas are allocated a three digit code. This is prefixed by the three digit Indigenous Region code to complete the Indigenous Area code.

Special purpose codes are included as balancing items. Statistical Area Level 1 (SA1) allocated to these codes are not part of a distinct Indigenous Area.

- Codes ending in 94 are reserved for cases where people are coded to No Usual Address SA1s.
- Codes ending in 97 are reserved for cases where people are coded to Migratory, Offshore and Shipping SA1s.

Example:

State and Territory Name	State and Territory Code	Indigenous Area Code	Indigenous Area Name
Victoria	2	201001	Brimbank
Victoria	2	201002	Cardinia
Victoria	2	201003	Craigieburn - Sunbury
Victoria	2	201004	Cranbourne - Narre Warren
Victoria	2	201005	Frankston
Victoria	2	201006	Greater Dandenong
Victoria	2	294994	No usual address (Vic.)
Victoria	2	297997	Migratory - Offshore - Shipping (Vic.)

The codes used for the 2016 Indigenous Areas may not match those used in 2011 in some instances. In future ASGS editions, it may also be necessary to allocate new codes . Changes to codes occur where an Indigenous Area is abolished or changes significantly for new editions of the ASGS, the Indigenous Area identifier will be retired and the replacement Indigenous Area(s) given a new code. Correspondences enabling translation of data from 2011 to 2016 and how these changes have been applied will be released with this volume.

Indigenous Regions (IREG)

INDIGENOUS REGIONS (IREG)

Indigenous Regions are large geographical units loosely based on the former Aboriginal and Torres Strait Islander Commission boundaries. They are created by combining together one or more Indigenous Areas. The greater population of Indigenous Regions enables the highest level of analysis of attribute data through greater cross classification of variables compared with Indigenous Areas and Indigenous Locations. For the 2016 Australian Statistical Geography Standard (ASGS) 58 Indigenous Regions are defined to cover the whole of geographic Australia. Indigenous Regions do not cross State and Territory borders.

There are non-spatial Indigenous Regions for Migratory - Offshore - Shipping and No Usual Address in each State and Territory.

INDIGENOUS REGION NAMES
Indigenous Region Names are allocated by ABS and are generally based upon a commonly identified name or combination of names for the area/community which the boundary encompasses.

INDIGENOUS REGION CODING STRUCTURE
Indigenous Regions are allocated a two digit code. This is prefixed by a single digit State and Territory code to complete the Indigenous Region code.

Special purpose codes are included as balancing items. Statistical Area Level 1 (SA1) allocated to these codes are not part of a distinct Indigenous Region.

- Codes ending in 94 are reserved for cases where people are coded to No Usual Address SA1s.
- Codes ending in 97 are reserved for cases where people are coded to Migratory, Offshore and Shipping SA1s.

Example:

State and Territory Name	State and Territory Code	Indigenous Region Code	Indigenous Region Name
Victoria	2	201	Melbourne
Victoria	2	202	Victoria exc. Melbourne
Victoria	2	294	No usual address (Vic.)
Victoria	2	297	Migratory - Offshore - Shipping (Vic.)

The codes used for the 2016 Indigenous Regions may not match those used in 2011 in some instances. In future ASGS editions, it may also be necessary to allocate new codes . Changes to codes occur where an Indigenous Region is abolished or changes significantly for new editions of the ASGS, the Indigenous Region identifier will be retired and the replacement Indigenous Region(s) given a new code. Correspondences enabling translation of data from 2011 to 2016 and how these changes have been applied will be released with this volume.

Overview

OVERVIEW

The Australian Statistical Geography Standard (ASGS) brings together in one framework all of the regions which the Australian Bureau of Statistics (ABS) and many other organisations use to collect, release and analyse geographically classified statistics. The ASGS ensures that these statistics are comparable and geospatially integrated and provides users with a coherent set of standard regions so that they can access, visualise, analyse and understand statistics. The 2016 ASGS will be used for the 2016 Census of Population and Housing and progressively introduced into other ABS data collections. The ABS encourages the use of the ASGS by other organisations to improve the comparability and usefulness of statistics generally, and in analysis and visualisation of statistical and other data.

This publication highlights the Indigenous Structure within the ASGS. The Indigenous Structure provides a geographical standard for the publication and analysis of statistics and other data about Aboriginal and Torres Strait Islander Peoples. It is particularly used for releasing data from the Census of Population and Housing.

The Indigenous Structure comprises 3 levels of geographic units in a single hierarchy - Indigenous Regions, Indigenous Areas and Indigenous Locations. The regions in the Indigenous Structure are constructed from Statistical Area Level 1 (SA1s) regions from the Main Structure of the 2016 ASGS.

This is the second volume in a series detailing the 2016 ASGS produced by the ABS. This volume is also part of the second edition of the ASGS, which updates the first edition (introduced in 2011) for growth and change in Australia's population, economy and infrastructure. The 2016 ASGS edition also incorporates the Territory of Norfolk Island for the first time.

For support and further information about the ASGS and other ABS geospatial products please refer to the ABS website at https://www.abs.gov.au/geography.

Indigenous structure

INDIGENOUS STRUCTURE

PURPOSE

The Indigenous Structure provides a geographical standard for the publication and analysis of statistics about the Aboriginal and Torres Strait Islander population of Australia. The ABS is committed to improving the quality and comprehensiveness of data available about the Aboriginal and Torres Strait Islander population. Quality data helps to accurately measure and monitor progress against targets to help close the gap in Indigenous disadvantage. The release of an updated Aboriginal and Torres Strait Islander specific geography will enhance the interpretability of information about Aboriginal and Torres Strait Islander Peoples.

STRUCTURE
The Indigenous Structure comprises 3 levels of geographic units in a single hierarchy. The Indigenous Structure is built directly from Statistical Areas Level 1 (SA1s). Indigenous Locations are formed by combining together (i.e. aggregating) one or more SA1s. These in turn are aggregated to form Indigenous Areas, which are aggregated to form Indigenous Regions.

At each level of the hierarchical structure, the component geospatial units collectively cover the whole of geographic Australia without gaps or overlaps.

METHODOLOGY
The boundaries for the Indigenous Structure are constructed from SA1s. SA1s were developed with a number of Aboriginal and Torres Strait Islander specific design considerations that enable them to be a highly effective building block for the Indigenous Structure. Compared to other structures in the Australian Statistical Geography Standard (ASGS), the Indigenous Structure ensures that the data produced for these areas is more useful, as it better represents the different distribution of Aboriginal and Torres Strait Island Peoples in the broader Australian community, and ensures data can be released on these populations while also maintaining confidentiality.

There has been a considerable effort to improve the spatial accuracy of the mapping representing Aboriginal and Torres Strait Islander communities, particularly in remote areas. This flows through into the spatial accuracy of the SA1 boundaries that are used to bound these communities in the ASGS. This will facilitate improved enumeration and output of census and other data, and enable more effective spatial comparison with sources, such as satellite imagery.

SA1s separately identify Aboriginal and Torres Strait Islander communities with approximate populations of over 90. SA1s are designed to combine related populations and this includes Aboriginal and Torres Strait Islander populations. Resources such as language groups, information from persons with local knowledge of certain communities, and transport networks have all been used to maximise the extent to which SA1s contain interrelated Aboriginal and Torres Strait Islander populations.

In some cases, Aboriginal and Torres Strait Islander communities that are too small to be identified separately have been combined with other nearby and associated communities. This has resulted in some non-contiguous Indigenous SA1s with a population of over 90. This enables the release of census and other data on a population completely within Aboriginal and Torres Strait Islander communities.

Further information on SA1s can be found in the Australian Statistical Geography Standard (ASGS): Volume 1 - Main Structure and Greater Capital City Statistical Areas, July 2016 (cat. no. 1270.0.55.001).

About this Release

This publication is the second in a series of five yearly Volumes that details the various structures and regions of the Australian Statistical Geography Standard (ASGS). This 2016 standard provides a common framework of statistical geography used by the ABS and other organisations to enable the publication of statistics that are comparable and spatially integrated. The ASGS provides users with an integrated set of standard regions that they can use to access, visualise, analyse and understand statistics produced by the ABS and other organisations.

Volume 2 outlines the ASGS Indigenous Structure. This has been designed for the purpose of statistical analysis using spatial areas relevant to the distribution of Aboriginal and Torres Strait Islander populations. The boundaries produced for the Indigenous Structure are constructed from Statistical Areas Level 1 (SA1s). Digital boundaries and allocation tables for these regions can be obtained as

downloads within this product.

Explanatory Notes

Metadata for Digital Boundary Files

METADATA FOR DIGITAL BOUNDARY FILES

Australian Statistical Geography Standard (ASGS) Volume 2 - Indigenous Structure (cat no. 1270.0.55.002)

Date of Publication/ Date Stamp: 13 September 2016

Presentation Format: Digital boundaries

CUSTODIAN

Custodian: Australian Bureau of Statistics (ABS)

DESCRIPTION

Abstract:

The Australian Statistical Geography Standard (ASGS) is a hierarchical classification system of geographical regions and consists of a number of interrelated structures. The ASGS brings all the regions for which the Australian Bureau of Statistics (ABS) publishes statistics within the one framework and will be used by the ABS for the collection and dissemination of geographically classified statistics from the July 2016. It provides a common framework of statistical geography and enables the production of statistics which are comparable and can be spatially integrated.

This product, **Australian Statistical Geography Standard (ASGS) Volume 2 - Indigenous Structure** (cat no. 1270.0.55.002), is the second in a series of Volumes that detail the various structures and regions of the ASGS. Its purpose is to outline the conceptual basis for the design of the Indigenous Structure. This product contains several elements including the manual, region names and codes and the digital boundaries.

The digital boundaries for Volume 2 of the ASGS represent the Indigenous Structure, comprising;

- Indigenous Locations (ILOC)
- Indigenous Areas (IARE)
- Indigenous Regions (IREG)

File Nomenclature:

File names have the format <file type>_<2016>_<AUST> where:
<file type> represents the type of boundaries in each file
ILOC = Indigenous Location
IARE = Indigenous Area
IREG = Indigenous Region
<2016> represents 2016 the year of the Australian Statistical Geography Standard (ASGS) Edition
<AUST> indicates the data covers all of Australia as defined in the ASGS Volume 1.

Within the files, the States and Territories are identified by unique one digit codes, as listed below:

State and Territory Codes and Names

Code	State and Territory
1	New South Wales
2	Victoria
3	Queensland
4	South Australia
5	Western Australia
6	Tasmania
7	Northern Territory
8	Australian Capital Territory
9	Other Territories

File Attributes:

All tables show file type, file name, spatial unit field and the data type.

File Type: Indigenous Location (ILOC)

File Name (s): ILOC_2016_AUST

Count	Field (mid/mif, TAB and GeoPackage)	Field (ESRI shp)	Data Type	Length
1	ILOC_CODE_2016	ILO_CODE16	Character	8
2	ILOC_NAME_2016	ILO_NAME16	Character	50
3	IARE_CODE_2016	IAR_CODE16	Character	6
4	IARE_NAME_2016	IAR_NAME16	Character	40
5	IREG_CODE_2016	IRE_CODE16	Character	3
6	IREG_NAME_2016	IRE_NAME16	Character	40
7	STATE_CODE_2016	STE_CODE16	Character	1
8	STATE_NAME_2016	STE_NAME16	Character	30
9	AREA_ALBERS_SQKM	AREASQKM16	Float	

File Type: Indigenous Area (IARE)

File Name (s): IARE_2016_AUST

Count	Field (mid/mif, TAB and GeoPackage)	Field (ESRI shp)	Data Type	Length
1	IARE_CODE_2016	IAR_CODE16	Character	6
2	IARE_NAME_2016	IAR_NAME16	Character	40
3	IREG_CODE_2016	IRE_CODE16	Character	3
4	IREG_NAME_2016	IRE_NAME16	Character	40
5	STATE_CODE_2016	STE_CODE16	Character	1
6	STATE_NAME_2016	STE_NAME16	Character	30
7	AREA_ALBERS_SQKM	AREASQKM16	Float	

File Type: Indigenous Region (IREG)

File Name (s): IREG_2016_AUST

Count	Field (mid/mif, TAB and GeoPackage)	Field (ESRI shp)	Data Type	Length
1	IREG_CODE_2016	IRE_CODE16	Character	3
2	IREG_NAME_2016	IRE_NAME16	Character	40
3	STATE_CODE_2016	STE_CODE16	Character	1
4	STATE_NAME_2016	STE_NAME16	Character	30
5	AREA_ALBERS_SQKM	AREASQKM16	Float	

DATA CURRENCY

Date of Effect: 13 September 2016

DATASET STATUS

Progress: Completed dataset

Maintenance and Update Frequency:

No further updates for these boundaries planned. There will be a progressive release of the other regions that make up the ASGS until late 2018 (ASGS Volumes 4 and 5). The ASGS will be revised in 2021.

ACCESS

Stored Data Format:
Digital as separate files for each level of the Indigenous Structure of the ASGS 2016.

Available Format:

The digital boundary files are in MapInfo TAB format (.TAB), MapInfo Interchange Format (.MID .MIF), Geopackage and ESRI Shapefile (.shp) format.
Spatial Representation Type:

Vector

Access Constraints:

Datum:

Geocentric Datum of Australia 1994 (GDA94)

The digital boundary files have the datum specified as 116 (GDA94). Users of MapInfo 6.0 or later are able to load data sets based on GDA94 directly, without transformation. Earlier versions of MapInfo cannot interpret GDA94 correctly and there may be alignment problems between data sets based on this datum and other earlier datums.

Projection:

Geographical (i.e. Latitudes and Longitudes)

Geographic Extent:

Geographic Australia.

DATA QUALITY

Lineage:

Mesh Blocks are the building blocks of the ASGS regions. Mesh Block boundaries were created using various sources including the PSMA digital topographic datasets and ABS SLA boundaries, zoning information from state planning agencies and imagery.

Positional Accuracy:

Positional accuracy is an assessment of the closeness of the location of the spatial objects in relation to

their true positions on the earth's surface.

The positional accuracy includes:

- a horizontal accuracy assessment
- a vertical accuracy assessment

Positional accuracy for ABS boundaries is dependent on the accuracy of the features they have been aligned to. ABS boundaries are aligned to a number of layers supplied by PSMA with an accuracy of +/-50 mm.

PSMA layers and their positional accuracy are as follows:

- Transport and Topography
  +/- 2 meters in urban areas and +/- 10 meters in rural and remote areas
- CadLite
  +/- 2 meters in urban areas and +/- 10 meters in rural and remote areas
- Administrative Boundaries
  Derived from the cadastre data from each Australian State and Territory jurisdiction
- Greenspace and Hydrology
  Relative spatial accuracy of these themes reflects that of the jurisdictional source data. The accuracy is +/- 2 metres in urban areas and +/- 10 metres in rural and remote areas.

Attribute Accuracy:

All codes and labels for the ASGS 2016 Indigenous Structure are fully validated.

Logical Consistency:

Regions are closed polygons. Attribute records without spatial objects have been included in the data for administrative purposes.

Completeness:

All levels of the 2016 ASGS Indigenous Structure are represented.

CONTACT INFORMATION
Contact Organisation: Australian Bureau of Statistics

Contact: For further information email <client.services@abs.gov.au> or contact the National Information and Referral Service (NIRS) on 1300 135 070.

Information about CSV Files

INFORMATION ABOUT CSV FILES

The product **Australian Statistical Geography Standard (ASGS) Volume 2 – Indigenous Structure** (cat no. 1270.0.55.002) contains comma-separated value (.csv) files. These files list the codes, labels and hierarchies for all the regions within the Indigenous Structure.

There is one allocation table in .csv file format that relates Statistical Areas Level 1 (SA1s) to the Indigenous Structure hierarchy:

- Indigenous Structure Allocation Table

There are three .csv files listing the geographical hierarchies for each of the following regions:

- Indigenous Locations (ILOCs)
- Indigenous Areas (IAREs)
- Indigenous Regions (IREGs)

The Indigenous Structure is built from aggregations of SA1s. The hierarchy is listed from the lowest level of the ASGS up and all files cover the whole of Australia.

FILE CONTENTS:

Indigenous_Structure_Allocation_2016 includes the following fields:

- SA1_MAINCODE_2016
- ILOC_CODE_2016
- ILOC_NAME_2016
- IARE_CODE_2016
- IARE_NAME_2016
- IREG_CODE_2016
- IREG_NAME_2016
- STATE_CODE_2016
- STATE_NAME_2016
- AREA_ALBERS_SQKM

ILOC_2016_AUST includes the following fields:

- ILOC_CODE_2016
- ILOC_NAME_2016
- IARE_CODE_2016
- IARE_NAME_2016
- IREG_CODE_2016
- IREG_NAME_2016
- STATE_CODE_2016
- STATE_NAME_2016
- AREA_ALBERS_SQKM

IARE_2016_AUST includes the following fields:

- IARE_CODE_2016
- IARE_NAME_2016
- IREG_CODE_2016
- IREG_NAME_2016
- STATE_CODE_2016
- STATE_NAME_2016
- AREA_ALBERS_SQKM

IREG_2016_AUST includes the following fields:

- IREG_CODE_2016
- IREG_NAME_2016
- STATE_CODE_2016
- STATE_NAME_2016
- AREA_ALBERS_SQKM

Information about 2011 to 2016 ASGS Correspondences

INFORMATION ABOUT 2011 to 2016 ASGS CORRESPONDENCES

The ABS has developed a suite of geographical correspondences, primarily to assist users make comparisons and maintain time series between different editions of the Australian Statistical Geography Standard (ASGS). Correspondences are a mathematical method of reassigning data from one geographic region to another geographic region. The 2011 to 2016 ASGS correspondences utilise a 2011 Mesh Block (MB) population weighted grid.

In many cases a correspondence is the only option available when attempting to convert data from one geographic region to another and may be an appropriate approach. However, caution should always be used when applying correspondences as there may be instances where this approach would not appropriately reflect the actual characteristics of a region. Issues surrounding the use of correspondences are discussed in the ABS publication:
Information Paper: Converting Data to the Australian Statistical Geography Standard, 2012 (cat. no. 1216.0.55.004).

This document details how the population weighted grid method produces correspondences, and provides a description of how the quality indicator is calculated. To assist users with making a determination of how well a correspondence may or may not convert data, the ABS has developed a quality indicator which is supplied with each correspondence.

The following ASGS Main structure example and method reflect the approach used for correspondences produced for ASGS Volumes 1, 2 and 3.

Population Weighted Grid Correspondences

The population weighted grid method that the ABS has adopted generates a series of grid points that represent the underlying geographical distribution of a weighting unit, most often the Mesh Block population. For the population distribution, these points have been developed with input from various administrative sources including Geoscience Australia's Gazetteer and PSMA's Geocoded National Address File.

Each grid point is then assigned a value based on this population weight. These are subsequently used as a basis for determining how much of the weighting unit is donated to a 'TO unit' based on how the weighting unit is intersected. This is demonstrated in the below example which develops a 2011 MB to 2016 Statistical Area Level 1 (SA1) correspondence.

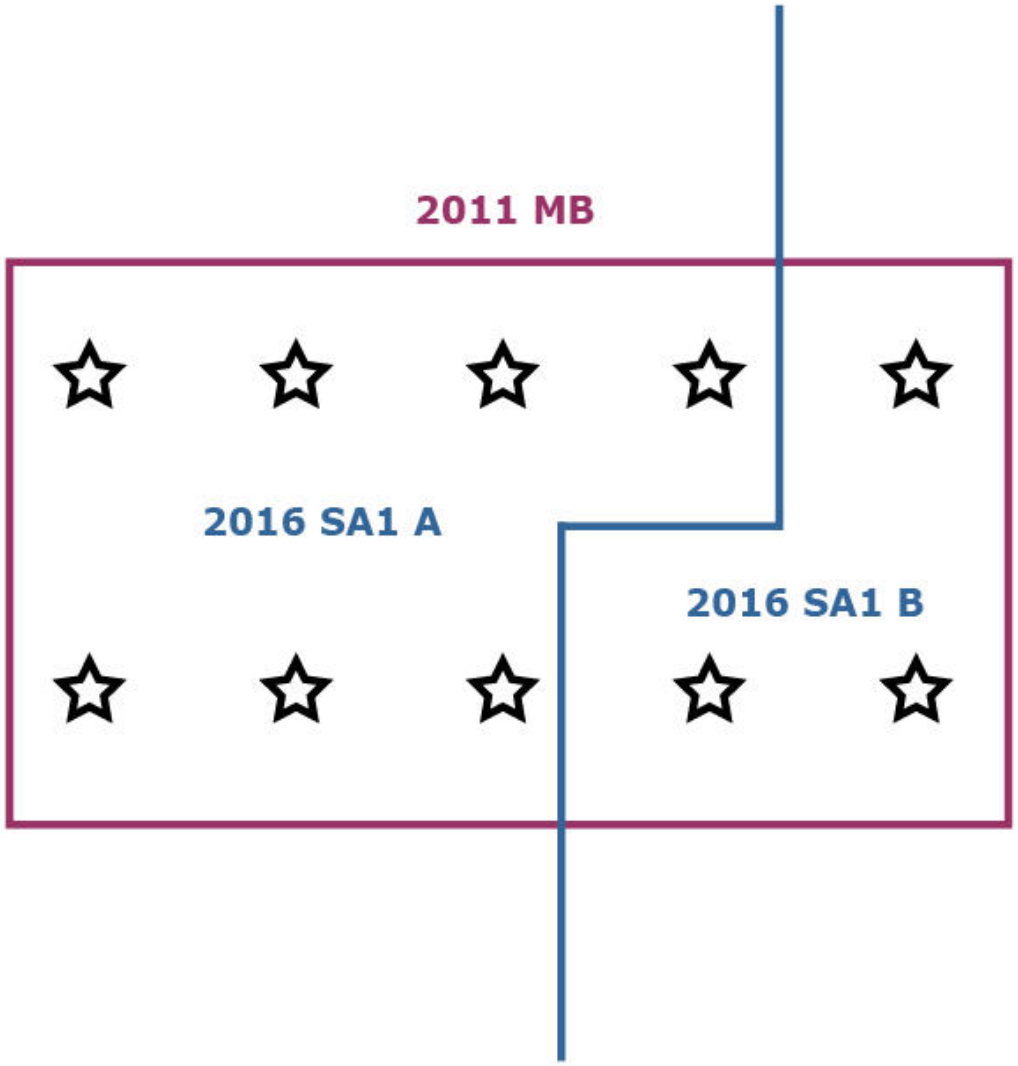


Diagram 1: Example of developing a correspondence between a 2011 MB and two 2016 SA1s which intersect a MB.

In the example the red boundary is a 2011 Mesh Block, which is the weighting unit in this correspondence. It is intersected by two 2016 SA1s, which are the TO units, or the geographical boundaries that are being corresponded to. The Mesh Block weighting unit above contains 40 persons. This population is then evenly distributed across the 10 grid points, meaning each grid point represents 4 persons.

The next step in the correspondence generation process is to determine the proportion that the MB, as the weighting unit, is donating to the respective SA1 TO units. As can be seen in the diagram above there are 7 grid points in SA1 A, and three in SA1 B. Given that each grid point represents 4 persons, 28 persons are located in SA1 A and 12 in SA1 B. In proportional terms the weighting unit is then donating to the respective SA1s as follows:

- SA1 A: 28 / 40 which gives a ratio of 0.7 or 70 per cent.
- SA1 B: 12 / 40 which gives a ratio of 0.3 or 30 per cent.

So the result is that the MB in question is donating 70 per cent of its data to SA1 A, and 30 per cent of its data to SA1 B.

The benefit of using this method is that any two sets of geographic regions can have a correspondence generated for them, and that any attribute value can be distributed across the grid to be used as the weighting unit.

Quality Indicator

The ABS conducted an investigation to determine how accurately correspondences converted data. This found that while some correspondences converted data well, there were many cases where the converted data did not reflect the actual characteristics of some geographical regions. Based on these findings a quality indicator was developed to inform data users of instances where the converted data values are likely to be accurate, and where caution will be needed to be used when assessing the results.

The method that has been developed to generate the quality indicator involves a number of steps. Firstly it looks at the value that a FROM region donates to a TO region as a ratio of the whole FROM region. The next step is to examine the value that the FROM region donates to the TO region as a ratio of the whole TO region. These two values are then multiplied together to provide the component for that FROM region. This process is then repeated for each donating FROM region, with the component values then added to provide the overall score for the TO region. Based on the score returned, a textual description is then applied as to how well the ABS expects data to be converted to the TO region. This is highlighted in the example below.

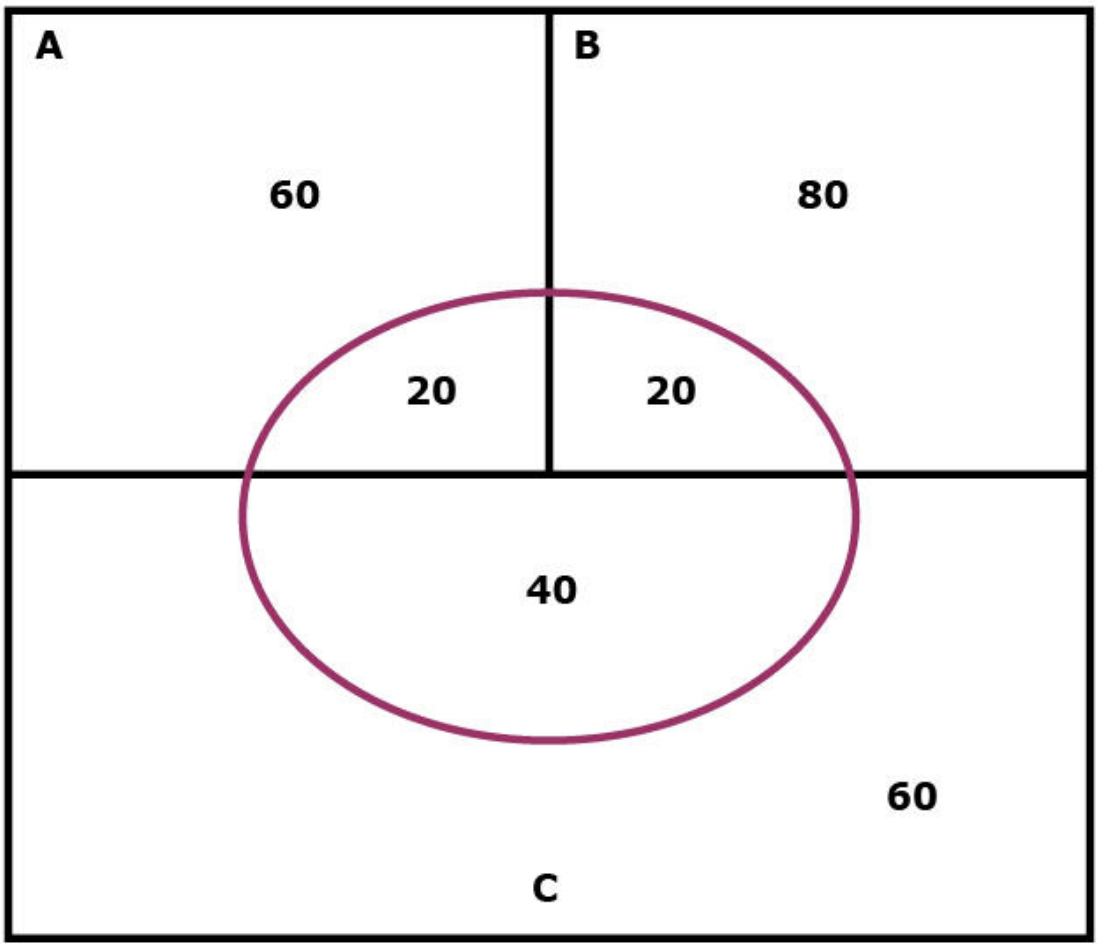


Diagram 2: Illustration of 3 FROM regions to 1 TO region.

In this example there are three FROM regions A, B and C represented by the black boundaries. The TO region is represented by the red ellipse.

REGION A CALCULATION

STEP 1: Region A donates 20 persons to the TO region, while there are a further 60 people in FROM Region A that are not donated to the TO region. Therefore the ratio of FROM region A is 20 / 80, or 0.25.
STEP 2: The next step is to look at the value that is being donated from Region A compared to the total value of the TO region (ie 80 persons comprising 20 from Region A + 20 from Region B + 40 from Region C). Region A donates 20 persons, and the total population is 80. So in this case the ratio is 20 / 80, or 0.25.
STEP 3: Region A's component score is then calculated by multiplying the TO and FROM score (0.25 x 0.25) giving Region A a component score of 0.0625.

The same process is then applied to FROM Regions B and C.

REGION B CALCULATION

Region B donates 20 persons with a further 80 persons in the remainder of the FROM region. Therefore its ratio is 20 / 100 or 0.2. Region B donates 20 persons and the total population of the TO region is 80 so the ratio is 20 / 80 or 0.25. Region B's component score is therefore 0.2 x 0.25 or 0.05.

REGION C CALCULATION

Again Region C donates 40 persons with another 60 in the remainder of FROM Region C. The ratio is 40 / 100 or 0.4. The 40 persons donated are then compared against the total population of the TO region of 80, so the ratio is 40 / 80 or 0.5. This results in the component score for From Region C being 0.4 x 0.5 or 0.2.

SUMMING COMPONENT SCORES

The final step is to add the three component scores. In this case:

- Region A = 0.0625
- Region B = 0.05
- Region C = 0.2

QUALITY INDICATOR

The final result is that the TO region in this example would have a quality indicator score of 0.3125, a score that the ABS would regard as being poor, meaning that caution would have to be used when using the results of data converted to the TO region.

The textual descriptions and the associated definitions that will be supplied for each TO region in a correspondence are as follows.

Good (Greater than 0.9)– The ABS expects that for this TO region the correspondence will convert data to a high degree of accuracy and users can expect the converted data will reflect the actual characteristics of the geographic regions involved.

Acceptable (0.75 to 0.9)– The ABS expects that for this TO region the correspondence will convert data to a reasonable degree of accuracy, though caution needs to be applied as the quality of the converted data will vary and may differ from the actual characteristics of the geographic regions involved.

Poor (Less than 0.75) – The ABS expects that for this TO region there is a high likelihood the correspondence will not convert data accurately and that the converted data should be used with caution as it may not reflect the actual characteristics of many of the geographic regions involved.

Overall Quality Indicator

An overall quality indicator is given to each correspondence. The aim of this is to provide users with a reasonable idea of how well the correspondence will convert data across the whole of the correspondence.

The overall quality indicator is derived from multiplying the population of each TO region with that TO regions quality indicator score, based on the methodology described above. The values produced by this multiplication for each TO region are then added together. This aggregated value is then divided by the total population of the TO regions. This will return a result similar to the individual quality indicator scores. Similar textual descriptions are then applied.

Good – The ABS expects that the correspondence will convert data overall to a high degree of accuracy and users can expect the converted data will reflect the actual characteristics of the geographic regions involved.

Acceptable – The ABS expects that the correspondence will convert data overall to a reasonable degree

of accuracy, though caution needs to be applied as the quality of the converted data will vary and may differ in parts from the actual characteristics of the geographic regions involved.

Poor – The ABS expects there is a high likelihood the correspondence will not convert data overall accurately and that the converted data should be used with caution as it may not reflect the actual characteristics of many of the geographic regions involved.

Metadata for Correspondences

METADATA FOR CORRESPONDENCE FILES

Correspondences allow users to reallocate data between areas by providing a population weighted proportionate distribution and a goodness of fit indicator. These correspondences may then be extended to develop a one to one concordance based on the most significant contributors.

This publication contains a suite of correspondences for the Australian Statistical Geography Standard (ASGS) Indigenous Structure between the 2011 and 2016 ASGS.

FILE FORMAT

There are a number of correspondences available within this product. The correspondences are supplied in Microsoft Excel format (.xls). Within each Microsoft Excel file there may be several Worksheets along with a Contents page and Explanatory Notes.

The Worksheets are as follows:

QI_MEASURE
This Worksheet contains the overall quality measure in textual description, This Worksheet will always be supplied with correspondences.

QI_INDICATOR
This Worksheet contains the individual quality indicator in textual descriptions for every TO region. This Worksheet will always be supplied with correspondences.

CORRESPONDENCE
This Worksheet contains the main correspondence and the majority of the records. This Worksheet will always be supplied with correspondences.

NULL_TO_OR_FROM_FIELD
This Worksheet contains records where a FROM region does not have a corresponding TO region, or vice versa. An example of when this may occur is when one geography dataset contain islands which are not included in the other dataset. This Worksheet will only be supplied if records fall in to this category.

BELOW_MINIMUM_OUTPUT_SIZE
This Worksheet contains records that have a statistical weight below a pre-set minimum (typically below 0.01). These are records where the proportion of the FROM region that is being donated is very small and is deemed as being statistically insignificant. This Worksheet will only be supplied if there are records that fall in to this category.

MISSING_TO_UNITS
Contains records where the TO unit is not represented elsewhere in the correspondence. This is due to the TO unit being very small relative to the FROM unit and, as a result, a grid point is not associated with the TO unit. In cases where this occurs, documentation will be included with the affected correspondence as well as a list of the TO units that are not represented in the other Worksheets.

FILE NAMING CONVENTION FOR GRID BASED CORRESPONDENCES

Correspondence File Name

Grid based correspondences supplied by the ABS have a standard naming convention applied. The examples below relates to a correspondence where 2011 Statistical Areas Level 2 (SA2) are being corresponded to 2016 SA2s.

File name:
Statistical Area Level 2 2011 TO Statistical Area Level 2 2016

and

CG_SA2_2011_SA2_2016.xls

Table 1: Character and meaning of the file name.

Character	Meaning
C	Correspondence
G	Grid based correspondence
SA2	Represents the name of the FROM region, in this case Statistical Area Level 2
2011	The year that this version of the FROM region was released
SA2	Represents the name of the TO region, in this case Statistical Area Level 2
2016	The year that this version of the TO region was released
.xls	The format that the file is being supplied, Microsoft Excel format

CORRESPONDENCE WORKBOOK AND FIELD DEFINITIONS

Below is an example of the content for each of the Worksheets in the correspondence Microsoft Excel Workbook files provided in this publication. Definition of the fields in the Worksheets is also provided with the examples.

The QI_MEASURE Worksheet

Table 2: An example of the overall quality indicator of a grid based correspondence file.

QI_MEASURE
Good

In the above example the field name and descriptions are:

QI_MEASURE
The overall quality indicator for the entire correspondence.

The same textual descriptions used for the overall quality measure are also applied to the individual quality indicators. The textual descriptions are Good, Acceptable and Poor.

The QI_INDICATOR Worksheet

Table 3: An example of the quality indicator of a grid based correspondence file for each TO region.

SA2_MAINCODE_2016	SA2_NAME_2016	QI_INDICATOR
801051123	Black Mountain	Poor
801051126	Parkes (ACT) - North	Poor
801101137	Molonglo	Poor
505031255	Alkimos - Eglinton	Poor
801071132	Tuggeranong - West	Poor
801101139	Wright	Poor
127011592	Badgerys Creek	Poor
209041437	Wollert	Poor

In the above example the field names and descriptions are as follows:

SA2_CODE_2016
This is a unique code associated with each TO region, to which a textual description of quality is supplied. In this case it is the unique SA2 code.

SA2_NAME_2016
This is the name of the SA2 which in this example is the TO region to which a textual description of quality is supplied.

QI_INDICATOR
This is the textual description of quality that is supplied for each TO region of the correspondence.

The same textual descriptions used for the individual quality indicators are also applied to the overall quality measure. The textual descriptions are Good, Acceptable and Poor.

The CORRESPONDENCE Worksheet

Table 4: An example of a grid based correspondence file.

SA2_MAINCODE_2011	SA2_NAME_2011	SA2_MAINCODE_2016	SA2_NAME_2016	RATIO	PERCENT
101011001	Goulburn	101051539	Goulburn	1.0	100
101011002	Goulburn Region	101051540	Goulburn Region	1.0	100
101011003	Yass	101061541	Yass	1.0	100
101011004	Yass Region	101061542	Yass Region	1.0	100
101011005	Young	101061543	Young	1.0	100
101011006	Young Region	101061544	Young Region	1.0	100
101021007	Braidwood	101021007	Braidwood	1.0	100
101021008	Karabar	101021008	Karabar	1.0	100

In the above example the field names and descriptions are as follows:

SA2_MAINCODE_2011
This is the unique numerical code representing the FROM region and in this case, the unique 2011 SA2 code.

SA2_NAME_2011
This is a textual label associated with the unique code of the FROM region, in this case it is the textual label for each 2011 SA2.

SA2_MAINCODE_2016
This is the unique numerical code representing the TO region, in this case it is the unique 2016 SA2 code.

SA2_NAME_2016
This is a textual label associated with the unique code of the TO region, in this case it is the textual label for each 2016 SA2.

RATIO
This field describes the Ratio of the FROM region that is being donated to the TO region. The Ratio is a figure between 0 and 1.

PERCENTAGE
This field describes the Percentage of the FROM region that is being donated to the TO region. The Percentage is the Ratio multiplied by 100.

The NULL_TO_OR_FROM_FIELD Worksheet

Table 5: An example of a table identifying NULL areas in either the TO or FROM region in a grid based correspondence.

SA2_MAINCODE_2011	SA2_NAME_2011	SA2_MAINCODE_2016	SA2_NAME_2016	RATIO	PERCENT
		102011030	Calga - Kulnura	1.0	100

In the above example the field names and descriptions are as follows:

SA2_MAINCODE_2011
This is the unique numerical code representing the FROM region, in this case it is the unique 2011 SA2 code. In the example above there is no 2011 SA2 listed which indicates that the 2016 SA2 does not correspond with any 2011 SA2.

SA2_NAME_2011
This is a textual label associated with the unique code of the FROM region, in this case it is the textual label for each 2011 SA2.

SA2_MAINCODE_2016
This is the unique numerical code representing the TO region, in this case it is the unique 2016 SA2 code.

SA2_NAME_2016
This is a textual label associated with the unique code of the TO region, in this case it is the textual label for each 2016 SA2.

RATIO
This field describes the Ratio of the FROM region that is being donated to the TO region. The Ratio is a figure between 0 and 1.

PERCENTAGE
This field describes the Percentage of the FROM region that is being donated to the TO region. The Percentage is the Ratio multiplied by 100.

The BELOW_MINIMUM_OUTPUT_SIZE Worksheet

Table 6: An example of a table identifying ratios and percents of a TO region that is below minimum output size.

SA2_MAINCODE_2011	SA2_NAME_2011	SA2_MAINCODE_2016	SA2_NAME_2016	RATIO	PERCENT
107041144	Balgownie - Fairy Meadow	107041145	Corrimal - Tarrawanna - Bellambi	6.36e-05	0.0063571
109011172	Albury - East	109011175	Albury Region	5.91e-05	0.0059077
111021219	Toronto - Awaba	111021220	Wangi Wangi - Rathmines	7.54e-05	0.0075379

In the above example the field names and descriptions are as follows:

SA2_MAINCODE_2011
This is the unique numerical code representing the FROM region, in this case it is the unique 2011 SA2 code.

SA2_NAME_2011
This is a textual label associated with the unique code of the FROM region, in this case it is the textual label for each 2011 SA2.

SA2_MAINCODE_2016
This is the unique numerical code representing the TO region, in this case it is the unique 2016 SA2 code.

SA2_NAME_2016
This is a textual label associated with the unique code of the TO region, in this case it is the textual label for each 2016 SA2.

RATIO
This field describes the Ratio of the FROM region that is being donated to the TO region. The Ratio is a figure between 0 and 1. In many cases, as can be seen in the example above, the amount that a FROM

region is donating to a TO region is very small and is expressed as an exponential value.

PERCENTAGE
This field describes the Percentage of the FROM region that is being donated to the TO region. The Percentage is the Ratio multiplied by 100. In many cases, as can be seen in the example above, the amount that a FROM region is donating to a TO region is very small.

The MISSING_TO_UNITS Worksheet

There may be cases where a TO unit is not represented in a correspondence file. This is due to the TO unit being very small relative to the FROM unit, and as a result a grid point is not associated with the TO unit. In cases where this occurs, an additional worksheet will be included with the affected correspondence file. It will consist of a list of the TO units that are not represented in any of the other Worksheets listed above, and will be in a similar format.

FURTHER INFORMATION

More information on the ASGS and ABS Statistical Geography can be found by visiting the ABS website: https://www.abs.gov.au/geography

Any questions or comments can be emailed to <client.services@abs.gov.au> or contact the National Information and Referral Service (NIRS) on 1300 135 070.

Abbreviations

ABBREVIATIONS

ABS	Australian Bureau of Statistics
ASGS	Australian Statistical Geography Standard
Aust.	Australia
IARE	Indigenous Area
ILOC	Indigenous Location
IREG	Indigenous Region
MB	Mesh Block
NSW	New South Wales
NT	Northern Territory
OT	Other Territories
Qld	Queensland
SA	South Australia
SA1	Statistical Area Level 1
Tas.	Tasmania
Vic.	Victoria
WA	Western Australia

The Australian Statistical Geography Standard (ASGS) 2016 Structure and Summary (Appendix)

APPENDIX 1: THE AUSTRALIAN STATISTICAL GEOGRAPHY STANDARD (ASGS) 2016 STRUCTURE AND SUMMARY

The Australian Statistical Geography Standard (ASGS) 2016 Stru